Department of Defense Information Assurance Scholarship Program (IASP)

IA Summit
30 March 2004

Christine Nickell
NSA - NIETP

Agenda

- IASP Vision & Authority
- Program Overview
- Centers of Academic Excellence in Information Assurance Education
- IRMC Partnerships
- IASP Management Structure & Implementation
- Program Demographics
- Component Processes & Participation
- Lessons Learned & Challenges
- Questions & Answers
- Back up – NIETP information

Vision & Expected Outcomes

Vision

To develop and sustain a cadre of Information Assurance specialists dedicated to protecting DoD information systems and critical infrastructures from cyber threats.

Expected Outcomes

- New entrants to DoD workforce to enhance security of critical DoD information infrastructures
- Increased capability for education of IT/IA professionals in information infrastructure protection disciplines critical to the DoD
- Increased research and development capabilities in critical information infrastructure protection areas of interest to the DoD
- Enhanced knowledge & skills of the existing DoD IA/IT workforce

Authority

Section 922, National Defense Authorization Act of 2001 (Public Law 106-398),
Information Security Scholarship Program

"To encourage the recruitment and retention of DoD personnel who have the computer and network security skills necessary to meet DoD IA requirements, the SECDEF may carry out programs in accordance with this chapter to provide financial support for education in disciplines relevant to those requirements at institutions of higher education."

IASP Program Overview

- ***Award scholarships, via grants to NSA designated Center of Academic Excellence in Information Assurance Education (CAE/IAEs)***
  - Primary Objectives: Recruitment & Retention
  - **Recruitment:** Targets students who *are not current* DoD or Federal employees *and* who are enrolled in an NSA designated CAE/IAEs
    - Scholarships for Undergraduate (Jr & Sr), Graduate and Ph.D. degrees
  - **Retention:** Targets DoD personnel for Graduate and Ph.D programs
    - NDU/IRMC & partner CAE/IAE for a graduate degree (GS-13 and above, Military 0-5 and above)
    - NPS for MS/Ph.D. (Civilian and Military applicants, any grade)
    - AFIT for MS/Ph.D. (Civilian and Military applicants, any grade)
- ***Award grants to institutions***
  - **To enhance, expand IA education programs & curricula**
  - **Targets NSA designated CAE/IAEs** **www.defenselink.mil/nii/iasp**

CAE Criteria for Measurement

1. **Partnering with Historically Black Colleges (HBCUs) and Universities, Two-year Community Colleges, and Technical Schools**
2. **IA treated as multidisciplinary**
3. **Demonstration of use of IA within the university**
4. **Encourages research in IA**
5. **IA curriculum reaches beyond normal geographic borders**
6. **Faculty active in IA research and practice**
7. **State of the art IA reference system/materials**
8. **Declared concentrations in IA**
9. **Declared center for IA education**
10. **More than one faculty member**

NIETP
National INFOSEC Education and Training Program

Prerequisite: Use of NSTISSC Training Standards

Website: `http://www.nsa.gov/ia/academia/acade00001.cfm`

Centers of Academic Excellence in IA

46 Public / Private Non-DoD Institutions

- Auburn U
- Carnegie Mellon
- Capital College
- East Stroudsburg U
- Florida State
- George Mason U
- Idaho State
- Iowa State
- James Madison U
- Drexel University
- University of Maryland (Baltimore County)
- University of North Carolina, Charlotte
- U of Mass at Amherst
- U of Virginia
- West Virginia U
- Georgia Tech
- Syracuse U
- Purdue U
- Portland State
- Stanford
- UC Davis
- University of Illinois
- University of Idaho
- University of Tulsa
- Mississippi State U
- Norwich U
- Texas A&M
- Johns Hopkins
- U of Dallas
- George Washington U (DC)
- Walsh College
- Indiana University of Pennsylvania
- New Mexico Tech (NM)
- New Jersey Institute of Tech
- North Carolina State U (NC)
- Northeastern University (MA)
- Polytechnic University (NY)
- Pennsylvania State U
- U of Pennsylvania
- State University of New York at Buffalo (NY)
- State University of New York at Stoneybrook (NY)
- Stevens Institute of Tech
- Towson University (MD)
- University of Maryland, University College (MD)
- University of Nebraska at Omaha (NE)
- University of Texas at San Antonio (TX)

4 DoD Institutions

- Naval Postgraduate School
- United States Military Academy, West Point
- Information Resources Management College (IRMC) National Defense University (NDU)
- Air Force Institute of Technology

Disciplines & Programs of Study

- Computer Science
- Computer Engineering
- Software Engineering
- Computer Programming
- Computer Support
- Data Base Administration

- Information Assurance Training, Education, & Mgmt.
- Defensive Information Systems
- Threat and Vulnerability Assessments
- Computer Systems Analysis
- Electrical Engineering
- Electronic Engineering
- Mathematics
- Biometrics

- Operations Research
- Risk Management
- Systems Security Engineering
- Information Security

- And more...

Funding Scholarships & Grants

Recruitment Scholarships

- Full Tuition and fees
- Books
- Stipends:
  - Undergraduates ($10K)
  - Graduates ($15K)
- Internships (during breaks)

Retention Scholarships

- Full Tuition and fees
- Required Books

Components are responsible for TDY/PCS costs, salary and backfills

Grants

- Basic (Program Admin)
- IRMC Partnerships
- Capacity Building

- Labs
- Research projects
- Faculty development
- Curriculum development

IASP Management Structure

Program Oversight

- Defense-wide Information Assurance Program (DIAP)
  - Information Assurance
  - Overall Program
- Deputy Chief Information Officer (DCIO)
  - Information Technology
  - IT Workforce Recruitment/ Development/Retention

Program Execution

- National Security Agency
  - Executive Agent

IASP Implementation

eering Committee

- **DIAP (Chair)**
- **D/CIO (Co-chair)**
- **OSD/P&R (CPP, MPP)**
- **NDU/Information Resources Management College**
- **NSA**

- Addresses issues raised by Component/feedback from CAEs & students relating to program implementation
- Determines courses of action
- Reviews key documentation drafted by Executive Agent

tegrated Process Team

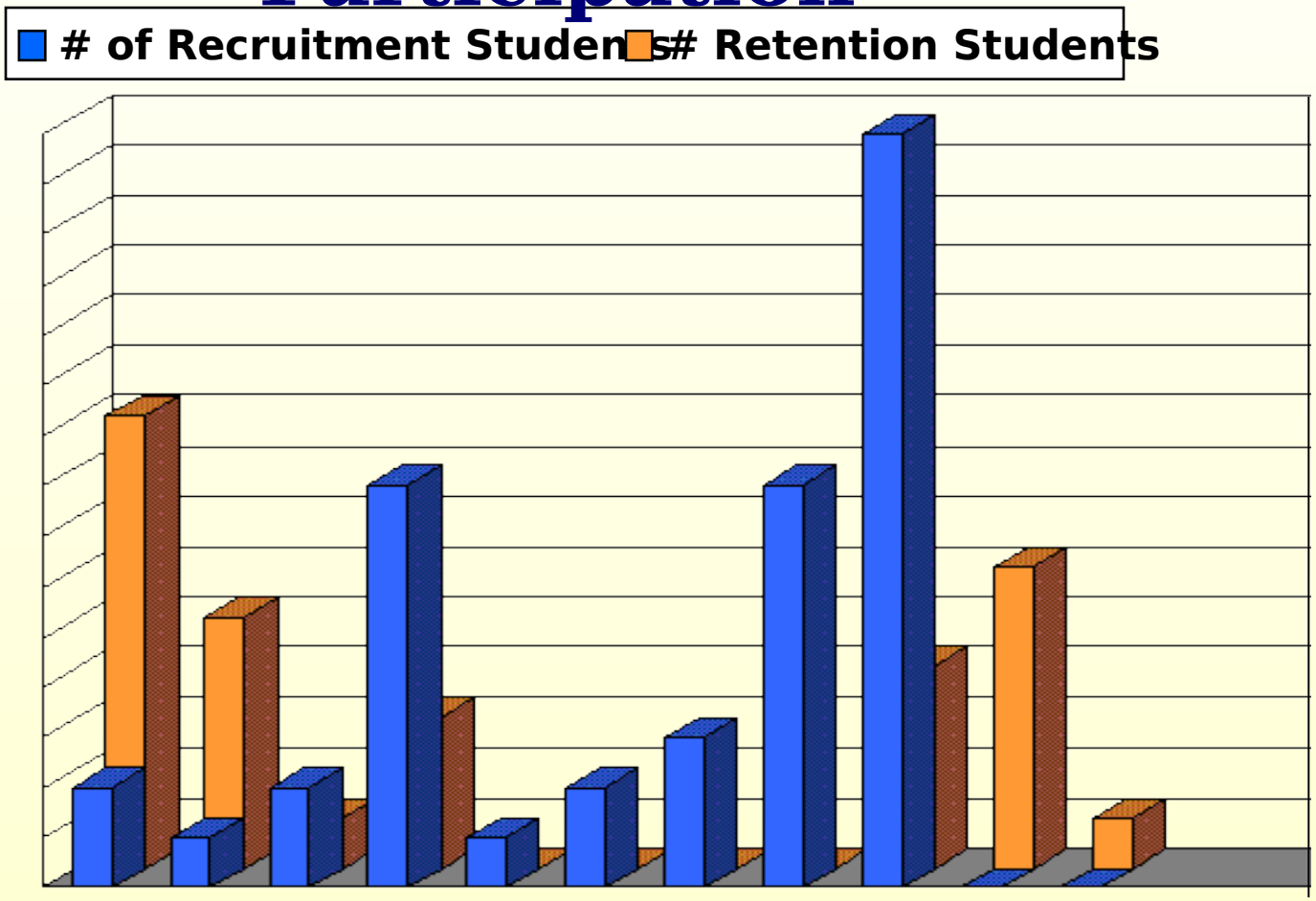
- **DoD Components**
  - **Services**
  - **Agencies**
  - **Other Offices**

- POCs for IASP w/in their organization
- Identifies concerns/issues relating to program implementation
- Provides feedback on documentation, implementation progress
- Interfaces with IA personnel in the field

Student Participation

- **FY03 Participation (includes AY 02-03 numbers)**
  - **Recruitment - 42 students**
    - **3 students graduated in 2002 & are currently working full-time in DoD**
  - **Retention – 29 students**
    - **12 military officers**
    - **6 military enlisted**
    - **11 civilians**
- **FY04 Participation (includes AY 03-04 numbers)**
  - **Recruitment**
    - **24 returning students funded**
    - **31 new students funded**
  - **Retention**
    - **Minimum 20 students to be funded**
    - **Dependent on Agency & Component needs**

FY03 Component Participation



Agency/Component	Air Force	Army	DIA	DISA	DSS	NAVAIR	NAVSEA	NRL	NSA	USMC	USN
# of Recruitment Students	29	15	3	4-6	0-1	2-0	3-0	8	15	0	0
# Retention Students	2	1	1	3	0	0	0	0	4	6	1

Actions for DoD Supervisors

To hire an IASP student intern/full-time employee candidate

1. **Identify available billets (full time equivalent) for the student**
2. **Identify HR POC to handle hiring and processing**
3. **Respond to ASD/NII data call for student billets (January)**
4. **Participate in student selection process (April/May)**
5. **Contribute to indoctrination of new interns/employees (June–August)**

To nominate an employee for the IASP

1. **Forward nomination to appropriate Agency/Component personnel channel for training and education, in response to ASD/NIII Long Term Training Requirements Memo for IRMC, AFIT and NPS (June)**
2. **As part of nomination process, a letter of recommendation for candidates is required and civilians must secure approval from 2nd level supervisor.**

Actions for DoD Employees

To apply for the IASP

1. **Contact your appropriate Agency/Component personnel channel for training and education**
   - **<u>Civilians:</u> Contact Agency/Component training offices**
   - **<u>Military Officers:</u> Contact Component POC for officer professional development**
   - **<u>Enlisted Personnel:</u> (currently USMC and Air Force participating) to contact training and education offices**
2. **Obtain approval through your respective chain of command for training and education, including service community manager or cognizant enlisted personnel manager for military.**
3. **Secure letter of recommendation from your supervisor and approval from the next level supervisor.**
4. **Ensure Agency/Component provides nomination package with appropriate documentation and endorsements to DoD CAE.**

IRMC Entrance Requirements

- **O-5 or above and civilians in the grade of GS-13 and above (O-4s and GS-12s may have the grade requirement waived if recommended by supervisor with a strong justification)**
- **Earned bachelor's with a GPA of 3.0 or above for those pursuing a master's; earned master's with a GPA of 3.2 or above for those pursuing a doctorate**
- **POC for questions and Nomination Packages:**
  - **Ms. Donita McGeary**
    Associate Dean of Faculty and Academic Programs
    Information Resources Management College
    Bldg 62, 300 5th Ave.
    Fort Lesley J. McNair
    Washington, DC 20319-5066
    (202) 685-3888, mcgearyd@ndu.edu

NDU/IRMC Partnerships

The DoD's Information Resources Management College, one of four DoD CAEs, boasts several certificate programs and partnerships to further support the retention program of the IASP.

- **George Mason University**
- **James Madison University**
- **UNC Charlotte University**
- **Syracuse University**
- **Tulsa University**
- **Mississippi State University**
- **University of Maryland Baltimore County**
- **University of Maryland University College**
- **University of Dallas**

NDU/IRMC Partnerships

The DoD's Information Resources Management College, one of four DoD CAEs, boasts several certificate programs and partnerships to further support the retention program of the IASP.

- **George Mason University**
  - **MS in Software Engineering or Information Systems**
    - **Full-time and part-time**
  - **PhD in Computer Science or Information Technology**
  - **Resident programs only**
- **James Madison University**
  - **MBA, concentration in Information Security**
  - **Part-time students only**
  - **Distributed learning opportunities available**

NDU/IRMC Partnerships

- **UNC Charlotte**
  - MS in Information Technology
  - Full-time or part-time
  - Resident program only
- **Syracuse University**
  - MS in Information Resources Mgmt, Concentration in IA
  - Full-time or part-time
  - Resident programs (in varied locations)
  - Distributed learning available

NDU/IRMC Partnerships

- **University of Maryland Baltimore County**
  - **MS in Computer Science**
    - **Full-time or part-time**
  - **PHD in Computer Science**
  - **Resident programs only**
- **University of Maryland University College**
  - **MS in Computer Science or Telecommunications Management**
  - **Full-time or part-time**
  - **Resident (multiple locations)**
  - **Distributed learning opportunities available**

NDU/IRMC Partnerships

- **University of Dallas**
  - MBA, Concentration in Information Security
  - Part-time students only
  - Distributed learning available
- **Mississippi State University**
  - MS in Computer Science or Management Information Systems
    - Full-time and part-time
  - PhD in Computer Science or Management Information Systems
  - Resident programs (in varied locations)

NDU/IRMC Partnerships

- **University of Tulsa**
  - **MS, PHD in Computer Science**
  - **Full-time students only**
  - **Resident program**

"In a networked environment, information assurance is critical. Information systems must be protected from attack…"

Donald Rumsfeld
Secretary of Defense

Notation: *Recruitment students attend full-time, resident programs; retention students may attend part-time and also utilize distributed learning options. All PhD programs are full-time, resident programs.*

AFIT Entrance Requirements

- **All grade levels allowed, including enlisted.**
- **MS degree program: appropriate bachelor's degree with a minimum GPA of 3.0**
- **PhD program: appropriate master's degree with a minimum GPA of 3.5**
- **Provide GRE scores if available. GRE requirements for MS are 500/verbal and 600/quantitative; GRE requirements for PhD are 550/verbal and 650/quantitative**

POC for questions and nomination packages:

Dr. Richard A. Raines
Department of Electrical and Computer Engineering
Air Force Institute of Technology
2950 P Street Bldg 640
Wright-Patterson AFB OH 45433-7765
(937) 255-3636 ext 4715, richard.raines@afit.edu

NPS Entrance Requirements

- **All grade levels are authorized, including enlisted**
- **MS degree program: must have a bachelor's degree with a minimum 2.8 GPA (on a 4.0 scale) or equivalent**
- **PhD program requirements are determined individually based on universities attended, the number of years that applicants have been out of school, work-related accomplishments, and other factors. Generally, NPS requires PhD candidates to be in the upper half of their MS program peers**

<u>POC for questions and nomination packages</u>:

Dr. Cynthia E. Irvine, Director
Center for INFOSEC Studies and Research
Information Assurance Scholarship Program
Code CS/Ic
Naval Postgraduate School
Monterey, CA 93943
831-656-2641, irvine@nps.navy.mil

IASP Lessons Learned

- **Component billets (full time equivalents) are critical: We need early commitment and follow through**
- **Component concern with costs to them – particularly for retention**
- **Students are most important – need timely HR support for hiring and security for clearances**
- **Capacity building grants allow flexibility for IA curricula, faculty development and research**
- **Schedules and milestones have been complicated by Government fiscal year vice academic years. Master schedules being worked to alleviate problems**

IASP Challenges

- **Availability of Component intern billets "up-front"**
- **Component processes need to be defined (indoctrination of new interns/employees)**
- **Lack of defined IA positions/career fields**
- **Lack of documented DoD requirements for IA degrees**
- **Perception of unreliable funding/lack of strong DoD commitment**
  - **FY03 was a Congressional add; funding arriving 3rd quarter FY**
- **Ability of DoD civilians to take advantage of the IASP**
- **Detailed program evaluation plan, performance measurements & evaluation database established; now being completed for each year.**

DoD IASP Summary

- **Scholarships for Bachelor, Masters, & Ph.D. programs to non-service students (recruitment) and *in-service DoD employees (retention)***
  - **Students enrolled in CAE/IAEs**
  - **NDU/IRMC partnerships with CAEs; NPS; AFIT**
- ***Selection Process***
  - ***DoD Component <u>Billets</u>/<u>FTEs</u>* for non-service students *<u>required</u> before awarding scholarships***
  - **DoD *Components select students based on DoD mission requirements;***
  - ***Schools provide formal assessment of student scholarship candidates***
- **Grants for capacity building:**
  - **IA curricula and faculty development, IA research, and labs**
  - ***DoD Components select/fund projects based on current & emerging DoD mission requirements***
- ***Active DoD management, including site visits & guidance on DoD priorities***
- ***DoD IA workshops while in school;* Mentor**

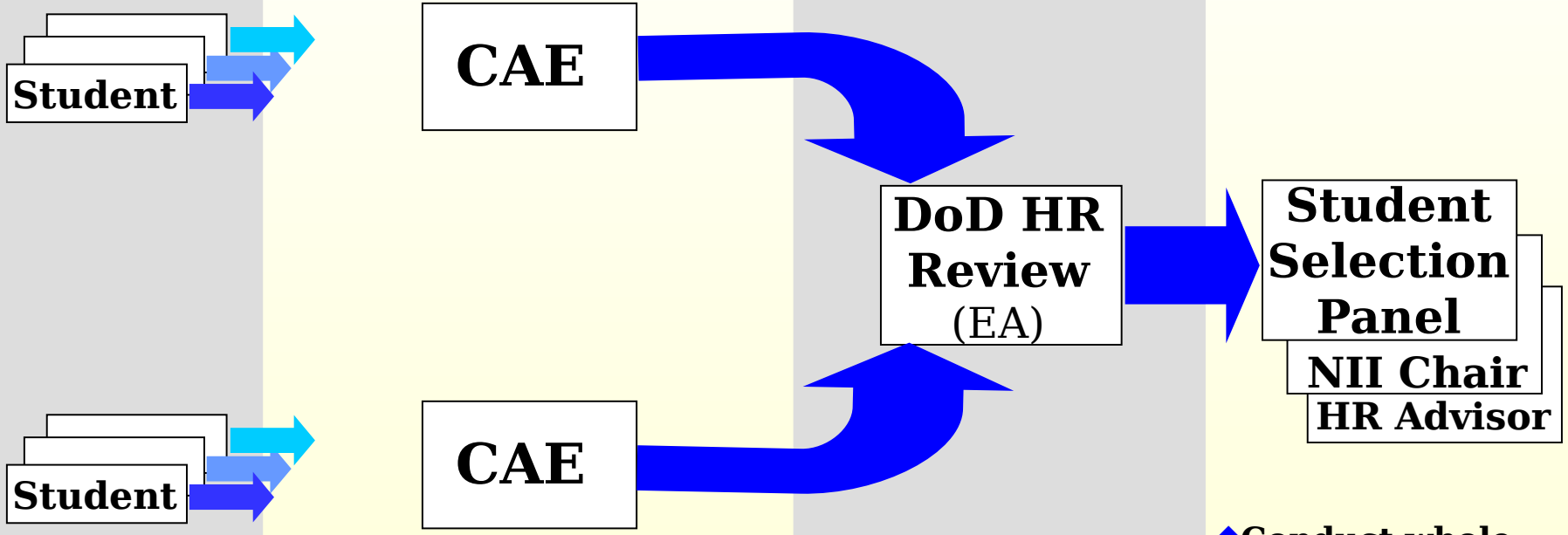
Program Points of Contact

- **NSA: Christine Nickell: 410-854-6206; c.nicke2@radium.ncsc.mil**
- **DIAP: George Bieber: 703-602-9980; george.bieber@osd.mil**
- **DCIO: Joyce France: 703-604-1489 x114; joyce.france@osd.mil**
- **IRMC: Donita McGeary: 202-685-3888; McGearyd@ndu.edu**

IASP Website: http://www.defenselink.mil/nii/iasp

Back Up

Recruitment Student Selection Process



1

- Prepare applications

2

- Evaluate applications
  - Credentials
  - Competencies
- Recommend(by discipline)
  - Highly Recommended
  - Recommended
  - Not Recommended

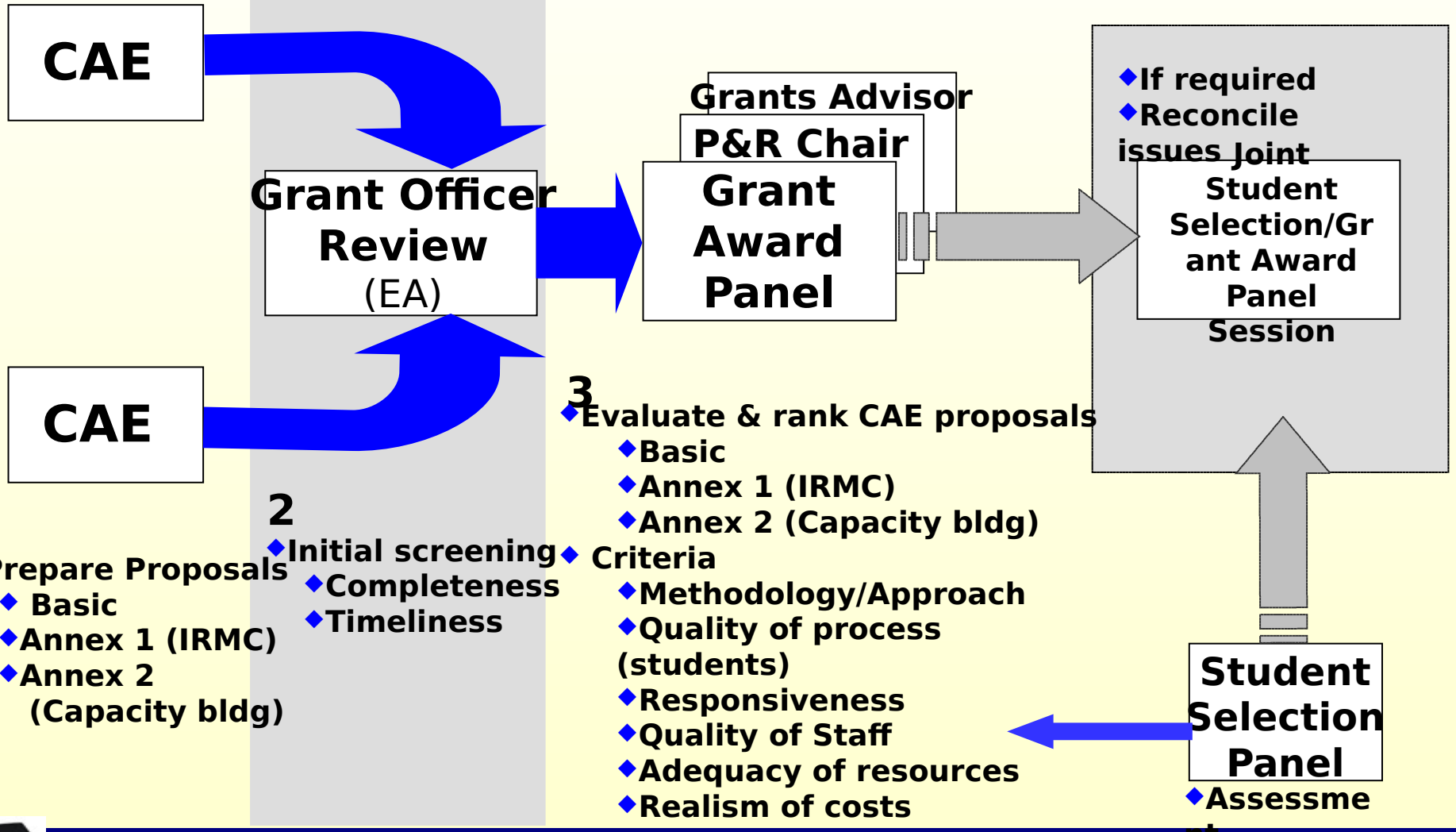
3

- Initial HR screening against eligibility rqmts
- Apply OPM "delegated recruiting" scheme
- Gross ranking of all applicants

4

- Conduct whole person review
- Rank applicants overall
- Component selection; NII mediation
- Assess overall quality of students (by CAE)

Grant Award Process

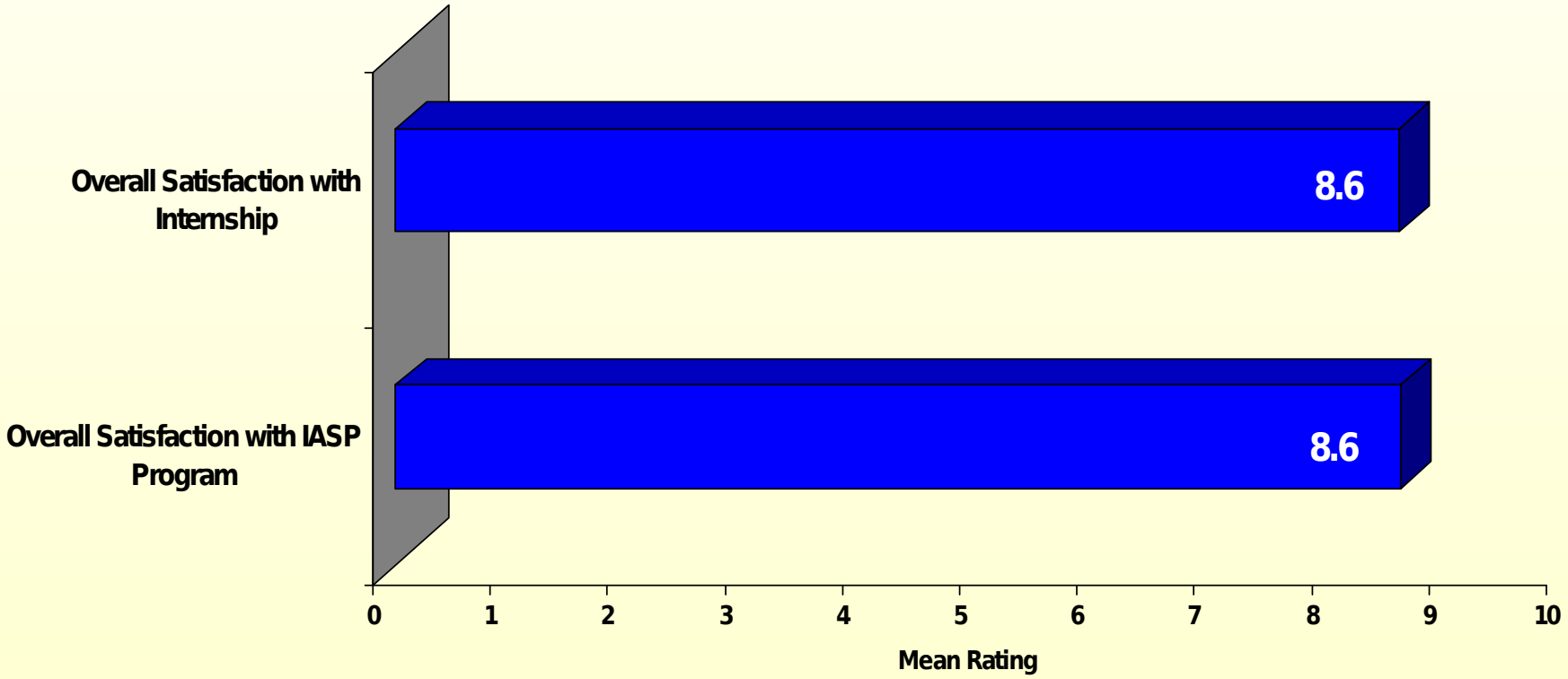


Evaluation: Recruitment Survey Results

Overall Satisfaction:

Overall Satisfaction with Internship *(sample size = 11)*

Overall Satisfaction with IASP Program *(sample size = 41)*



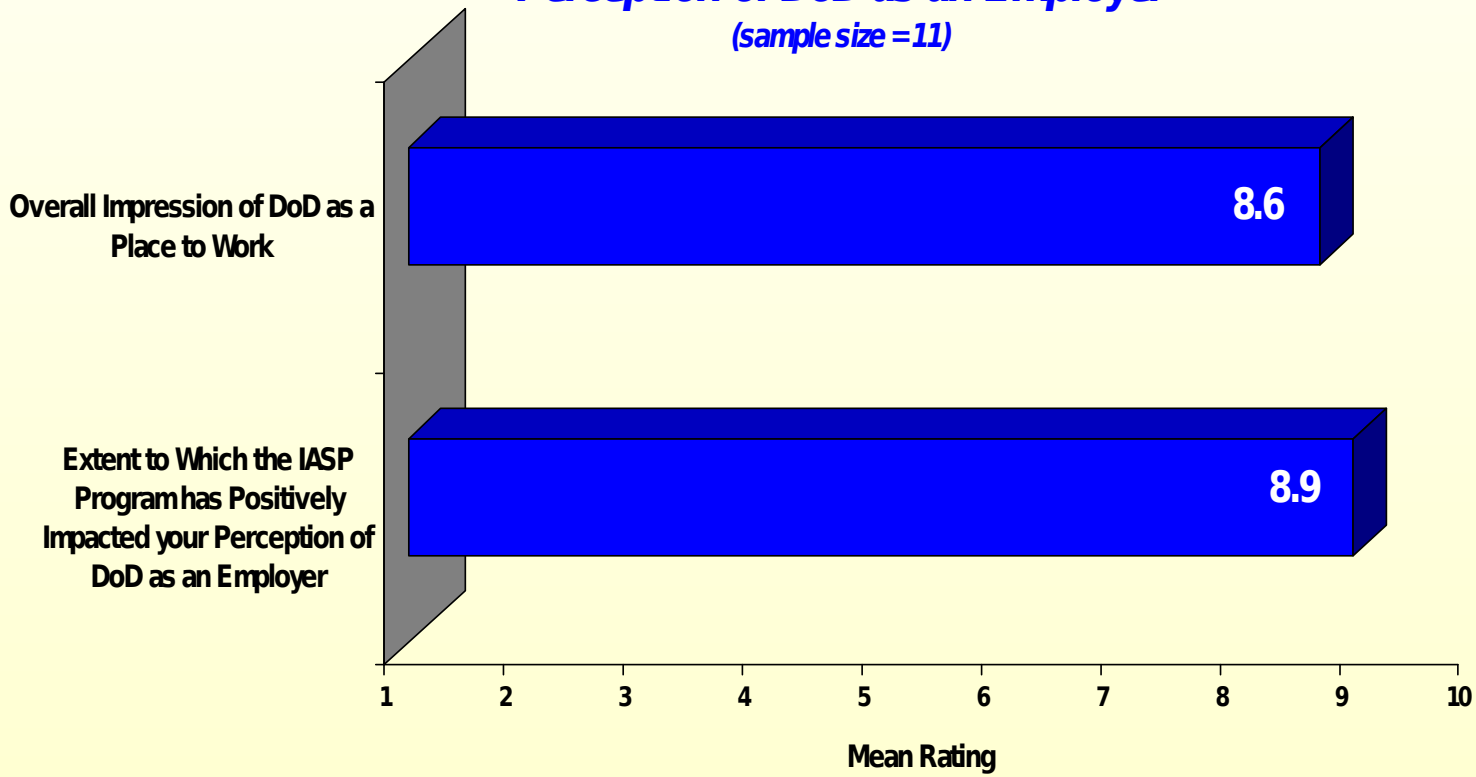
Source: Information Assurance Scholarship Program Survey; Conducted by IBM Business Consulting Services during January 2003-,March 2003.

Evaluation: Recruitment Survey Results

Internship Experience:

Overall Impression of DOD as a Place to Work and Perception of DoD as an Employer

(sample size = 11)

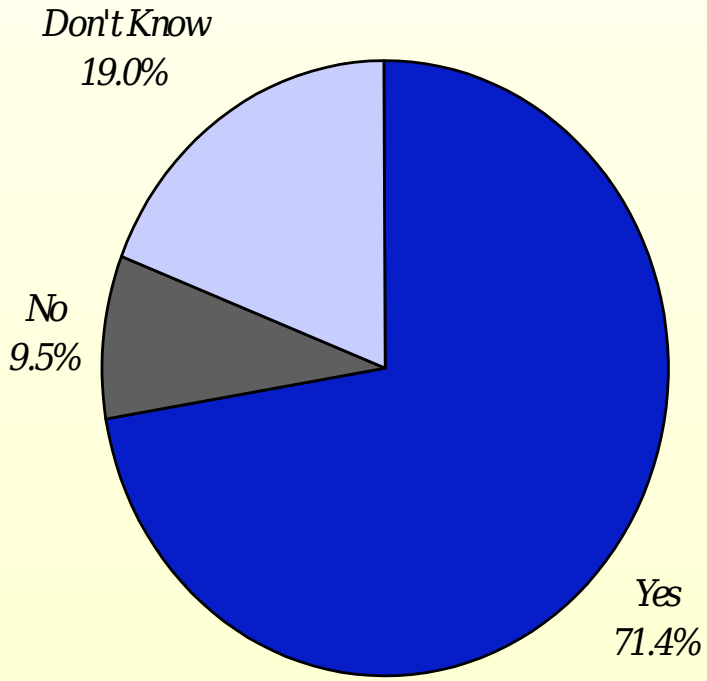


Source: Information Assurance Scholarship Program Survey; Conducted by IBM Business Consulting Services during January 2003-,March 2003.

Evaluation: Retention Survey Results

Does Participating in IASP Provide an Incentive for you to Stay with DoD Beyond your Obligated Period

sample size = 21

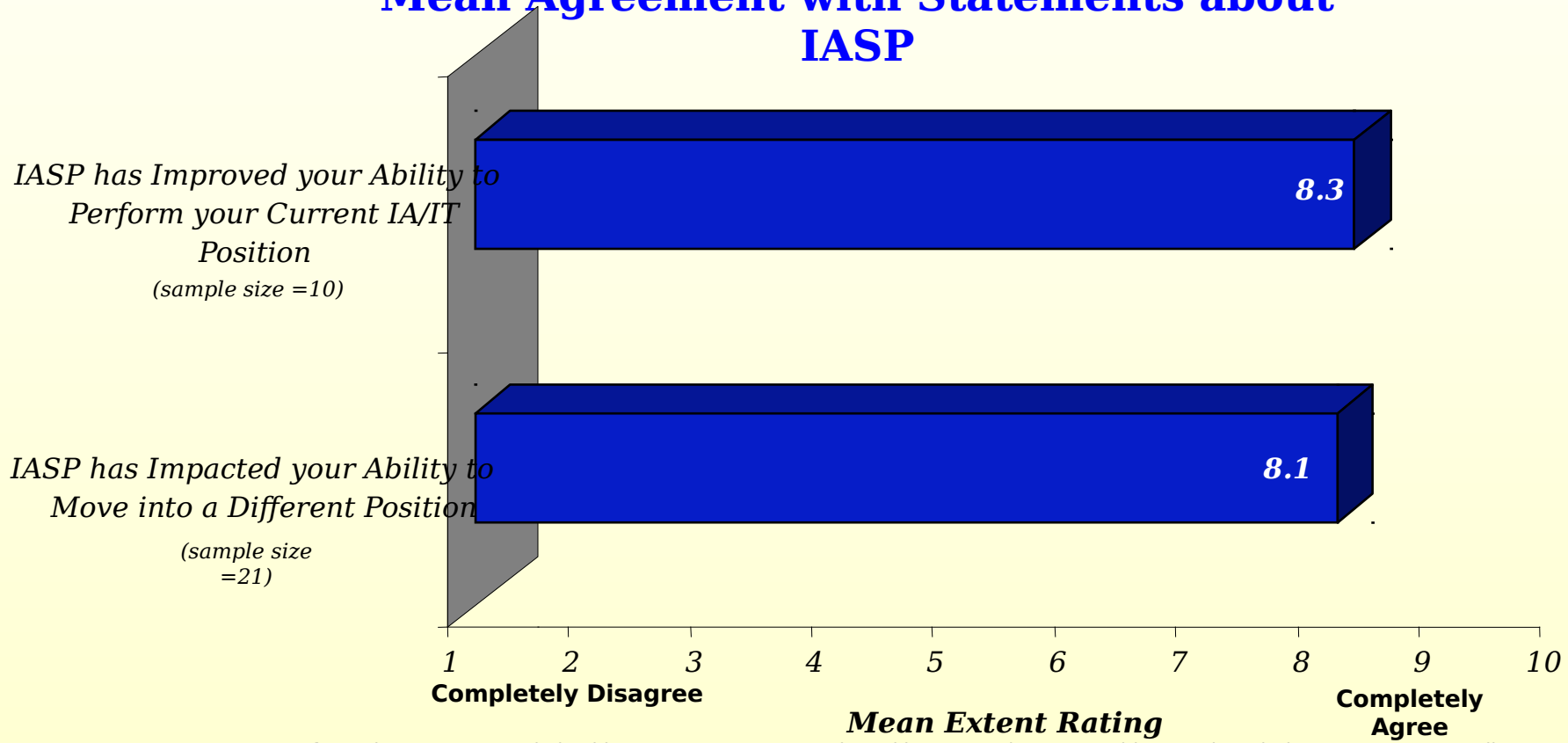


Source: Information Assurance Scholarship Program Survey; Conducted by IBM Business Consulting Services during January 2003-April 2003.

Evaluation: Retention Survey Results

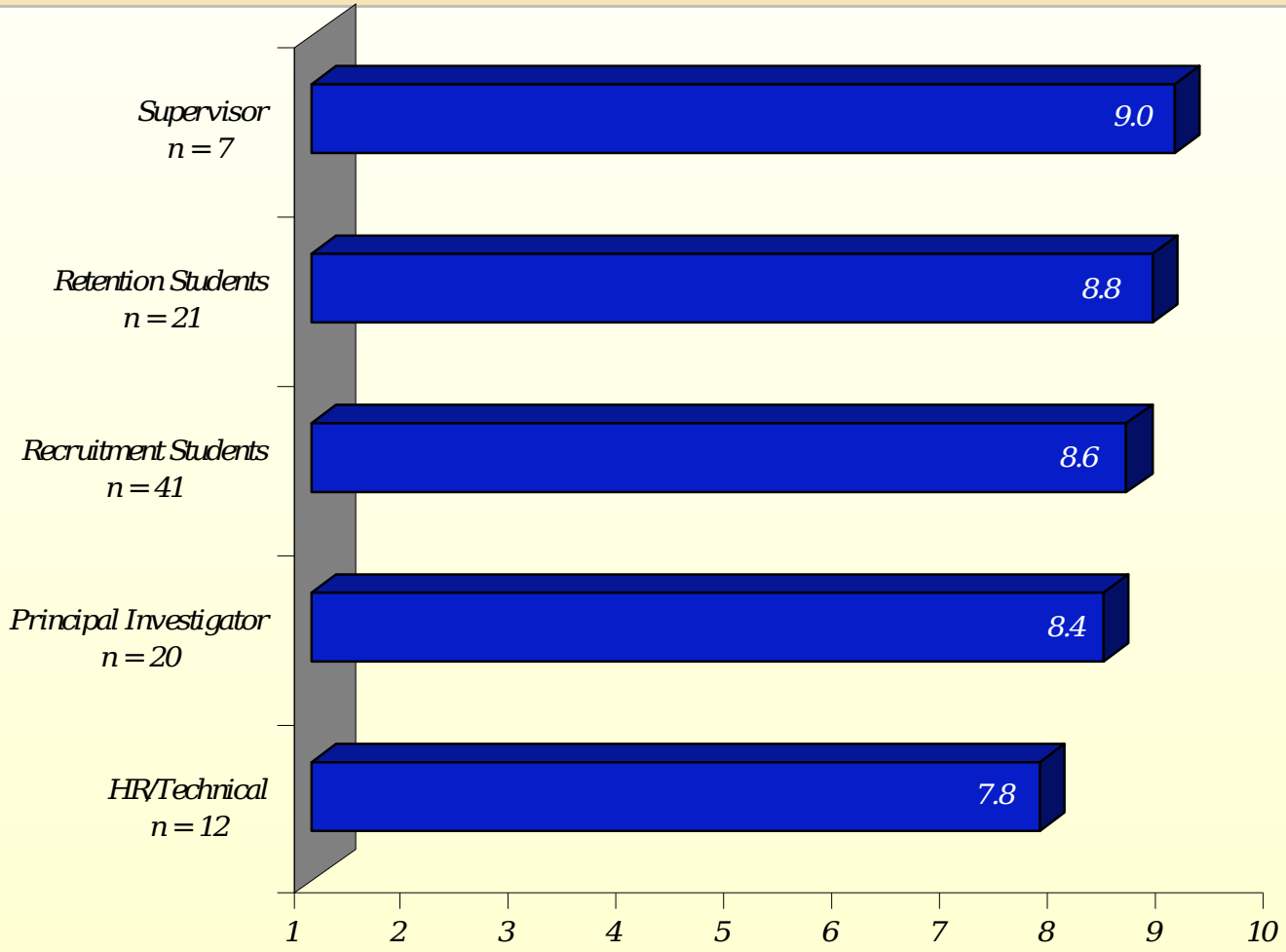
Program Experience:

Mean Agreement with Statements about IASP



Source: Information Assurance Scholarship Program Survey; Conducted by IBM Business Consulting Services during January 2003-April 2003.

Evaluation: Overall Satisfaction Results



Source: Information Assurance Scholarship Program Survey; Conducted by [illegible] Services during January 2003-April 2003.

IASP Master Schedule – FY03, 1st qtr 04

Recruitment Students

- Site visits to AY02-03 grantees began, continued thru May 03
- Ensure student placements at DoD Agencies for AY02-03
- IASP Solicitation & Vacancy Announcement posted
- ASD/C3I data call for components to intern/hiring billets
- IASP Proposals Due; Evaluations begin
- AY 02-03 Scholarship students began internships/full employment w/ DoD
- IASP AY 03-04 scholarship awards announced
- AY 03-04 Grants awarded to universities
- AY02-03 ending; reports due 14 Nov

O N D J F M A M J J A S O N D

- Cyber Corp Conference - June 14-17, Carnegie Mellon University
- AY04-04 Solicitation issued

Program evaluation is continuous.

IASP Master Schedule FY04

Retention (in-

O N D J F M A M J J A S O N D

- Program evaluation
- IRMC Sept classes start
- AFIT classes begin
- DoD students start Summer session @ NPS
- DoD students start Spring session @ NPS
- IRMC Jan students move to partner CAEs
- DoD Nominations (student packages) due NLT 28 January 2004
- IRMC Sep students move to partner CAEs
- DoD students start Winter session @ IRMC
- DoD students start Winter session @ NPS
- DoD components notified of student acceptances NLT 27 February 2004
- DoD students start Fall session @ NPS

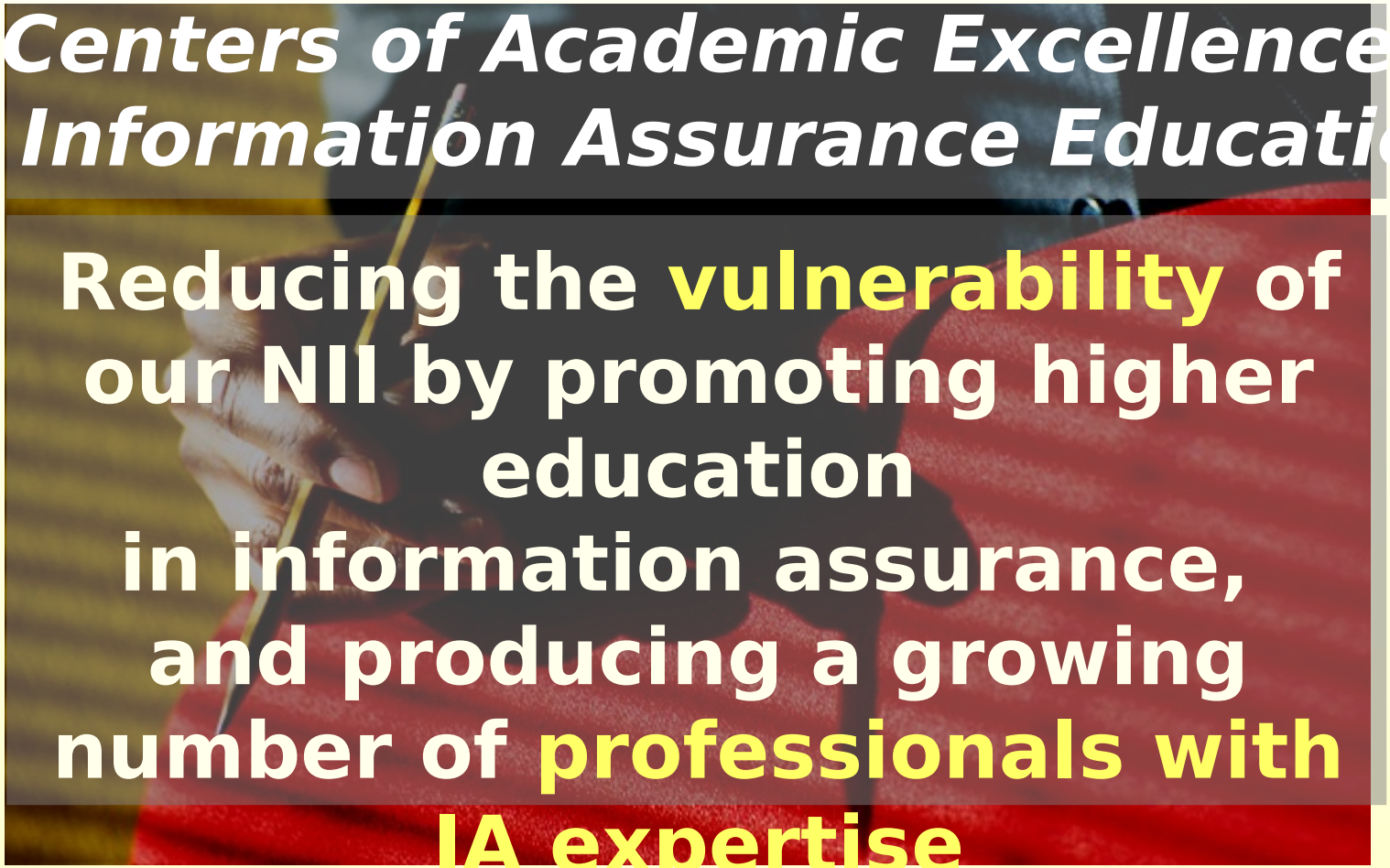
IASP Long Term Training Requirements memo issued (NPS, IRMC, AFIT) (for FY04/05)

- Green= OSD
- Red= AFIT
- Orange= Component
- Blue= NPS
- Black= CAEs
- Purple=IRMC

NIETP MISSION

The NIETP is designed to enhance the Information Assurance knowledge and skills in the American workforce and school population via community-based education and training programs that are national in focus, future oriented, multidisciplinary and tied to technology and business.

PARTNERSHIPS WITH ACADEMIA



Centers of Academic Excellence in Information Assurance Education

Reducing the vulnerability of our NII by promoting higher education in information assurance, and producing a growing number of professionals with IA expertise in various disciplines

BLUE BOX PROGRAM

PURPOSE:

- Enhance Awareness
- Encourage Information Systems Education and Training

- CD-ROMS
- VIDEO'S
- BROCHURES
- BOOKLETS

Self-Help Awareness Program

DIANE RILEY and TARAN WOLTMON

Project Managers, 410-854-6206

Community Standards

Committee on National Security Systems*
Standing Committee under:
President's Critical Protection Board
Executive Order 13231, Oct. 18, 2001
***Formerly: NSTISSC**
www.nstissc.gov

National Training Standards for:

Information Security Professionals – NSTISSI No. 4011 ← Being Updated in '04

Senior Systems Manager – NSTISSI 4012

Information System Security Manager – NSTISSI 4014 ← Under Vote

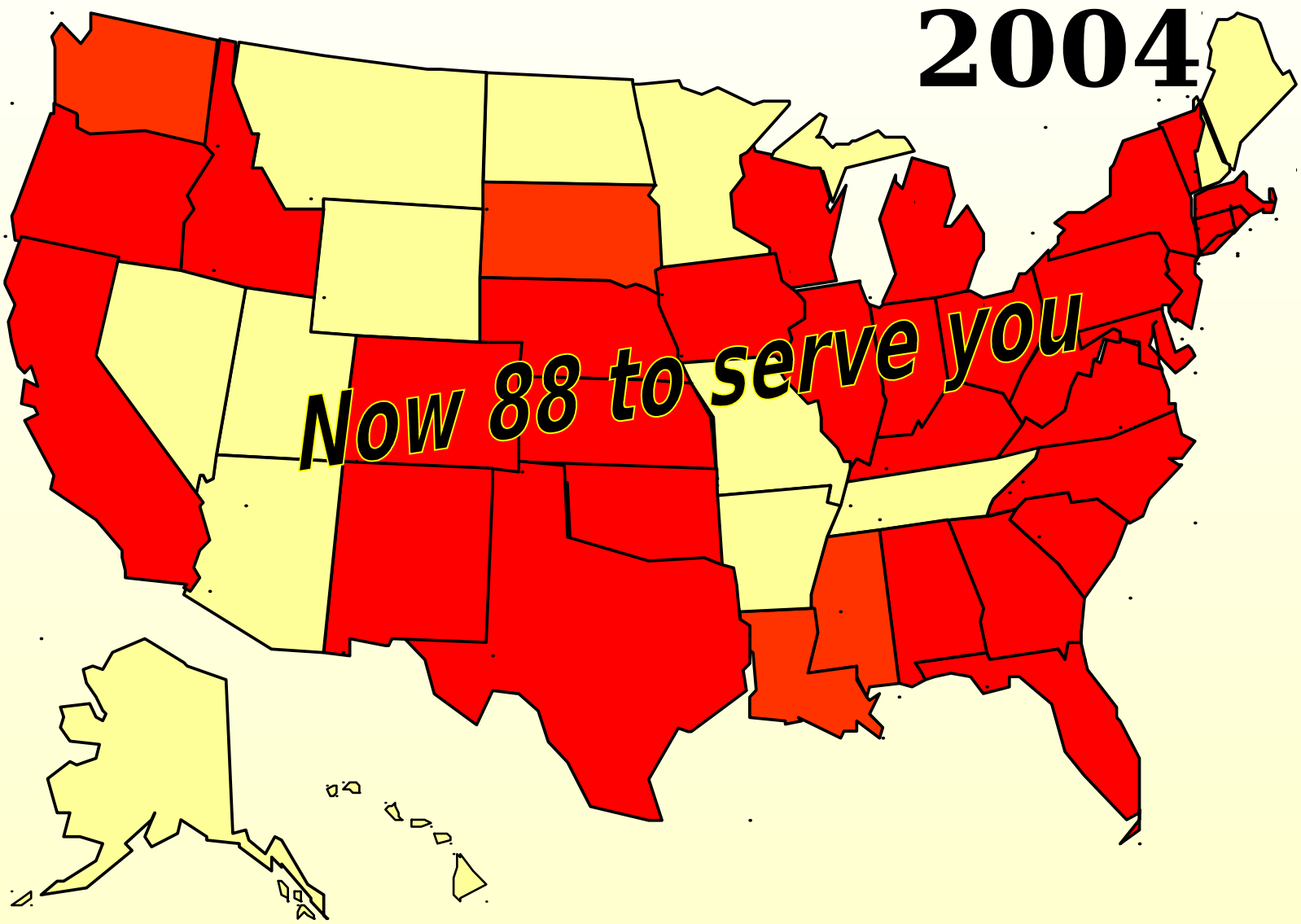
System Administrator – NSTISSI No. 4013 ← Prep for DIRNSA's Signature

System Certifier – NSTISSI No. 4015 ← Most Recent

Risk Analyst – NSTISSI No. 4016 ← Under Revision for 2nd V

System Security Engineer – NSTISSI No. 40XX ← Under Development in '0

I A CERTIFIED Training Centers



Partnerships with Business, Academia, & Government

National Colloquium for Information Systems Security Education

Purpose: **Academic colloquium with academia, government, business and industry INFOSEC experts to discuss direction of INFOSEC undergraduate and graduate curricula; academic disciplines; common requirements; specific knowledge, skills and abilities; certification requirements and feasibility of certification board formulation.**

http://www.ncisse.org

Conference: June, 2004
West Point, N Y

Educational Solutions for a Safer World

National Information Assurance Education and Training Program

National Security Agency
Information Assurance Directorate

http://www.nsa.gov/ia/academia/acade00001.cfm